

AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior listings and versions:

1. (currently amended): A method for binding an exogenous molecule to a binding site, wherein the binding site comprises a target site is located within a region of interest in cellular chromatin, wherein the method comprises:

(a) identifying an accessible region within the region of interest;
(b) identifying a target site for the exogenous molecule within the accessible region; and

(c) introducing the exogenous molecule into the cell;
whereby the exogenous molecule binds to the binding site.

2. (withdrawn): The method according to claim 1 wherein the cellular chromatin is in a chromosome.

3. (withdrawn): The method according to claim 1 wherein the accessible region is a nuclease hypersensitive region.

4 to 5. (canceled).

6. (withdrawn): The method according to claim 1, wherein the exogenous molecule is a protein.

7. (withdrawn): The method according to claim 6 wherein the protein performs a process selected from the group consisting of replication, recombination, integration, DNA repair, transcriptional regulation and chromatin remodeling.

8. (withdrawn): The method according to claim 6 wherein the protein is used for detection of a target sequence.

9. (withdrawn): The method according to claim 7, wherein the protein is a transcription factor.

10. (withdrawn): The method according to claim 9, wherein the transcription factor is a zinc finger protein (ZFP).

11. (withdrawn): The method according to claim 6 wherein the protein is encoded by an exogenous nucleic acid introduced into the cell.

12. (withdrawn): The method according to claim 1, wherein the cell is a eukaryotic cell.

13. (withdrawn): The method according to claim 12, wherein the cell is a plant cell.

14. (withdrawn): The method according to claim 12, wherein the cell is a mammalian cell.

15. (withdrawn): The method according to claim 14, wherein the cell is a human cell.

16. (withdrawn): The method according to claim 1, wherein the binding site is in a coding region.

17. (withdrawn): The method according to claim 1, wherein the binding site is in a non-coding region.

18. (withdrawn): The method according to claim 10, wherein the binding site comprises the sequence 5'-NNx aNy bNz c-3', wherein

each of (x,a), (y,b) and (z,c) is (N,N) or (G,K); and

at least one of (x,a), (y,b) and (z,c) is (G,K); wherein N is any nucleotide and K is either G or T.

19. (canceled).

20. (withdrawn): The method according to claim 11 wherein the nucleic acid is introduced into the cell by a method selected from the group consisting of lipid-mediated gene transfer, electroporation, direct injection, particle bombardment, calcium phosphate co-precipitation, DEAE-dextran mediated transfer, and viral vector-mediated transfer.

21. (currently amended): A method for binding a ZFP transcription factor to a binding site, wherein the binding site comprises a target site is located within a region of interest in cellular chromatin, wherein the method comprises:

- (a) identifying an accessible region within the region of interest;
 - (b) identifying a zinc finger protein (ZFP) binding sequence within the accessible region;
 - (c) designing a ZFP to bind to the binding sequence; and
 - (d) introducing the ZFP into the cell;
- whereby the ZFP binds to the binding site.

22. (withdrawn): The method according to claim 21 wherein the ZFP is introduced into the cell by introducing a DNA construct encoding the ZFP into the cell under conditions in which the construct expresses the ZFP.

23. (withdrawn): The method according to claim 21 wherein the cellular chromatin is in a chromosome.

24. (withdrawn): The method according to claim 21 wherein the accessible region is a nuclease hypersensitive region.

25 to 26. (canceled).

27. (withdrawn): The method according claim 21, wherein the binding site comprises the sequence 5'-NNx aNy bNz c-3', wherein

each of (x,a), (y,b) and (z,c) is (N,N) or (G,K); and
at least one of (x,a), (y,b) and (z,c) is (G,K); wherein N is any nucleotide and K is either G or T.

28 to 56. (canceled).

57. (currently amended): A complex between an exogenous molecule and a binding site in cellular chromatin, wherein the binding site comprises a target site and is in an accessible region of cellular chromatin.

58. (withdrawn): The complex of claim 57, wherein the exogenous molecule is a nucleic acid.

59. (withdrawn): The complex of claim 58, wherein the nucleic acid is a triplex-forming nucleic acid.

60. (previously presented): The complex of claim 57, wherein the exogenous molecule binds in the minor groove of double-stranded DNA.

61. (withdrawn): The complex of claim 57, wherein the exogenous molecule is a small molecule therapeutic.

62. (previously presented): The complex of claim 57, wherein the exogenous molecule is a protein.

63. (previously presented): The complex of claim 62, wherein the protein is a transcription factor.

64. (previously presented): The complex of claim 63, wherein the transcription factor is a zinc finger protein (ZFP).

65. (previously presented): The complex of claim 57, wherein the accessible region is a nuclease hypersensitive region.

66. (previously presented): A cell comprising the complex of claim 57.

67. (previously presented): The cell of claim 66, wherein the exogenous molecule is a protein.

68. (previously presented): The cell of claim 67, wherein the protein is encoded by a nucleic acid introduced into the cell.

69. (previously presented): The cell of claim 66, wherein the cell is a plant cell.

70. (previously presented): The cell of claim 66, wherein the cell is an animal cell.

71. (previously presented): The cell of claim 66, wherein the cell is a human cell.

72. (currently amended): A method for modulating the transcription of a gene in a cell, wherein the gene is present in a chromosome of the cell, by binding an exogenous molecule to a binding site in the chromosome, wherein the binding site comprises a target site in an accessible region of cellular chromatin.

73. (withdrawn): The method of claim 72, wherein modulation comprises an increase in transcription.

74. (withdrawn): The method of claim 72, wherein modulation comprises a decrease in transcription.

75. (withdrawn): The method of claim 72, wherein the exogenous molecule is a nucleic acid.

76. (withdrawn): The method of claim 72, wherein the nucleic acid is a triplex-forming nucleic acid.

77. (withdrawn): The method of claim 72, wherein the exogenous molecule binds in the minor groove of double-stranded DNA.

78. (withdrawn): The method of claim 72, wherein the exogenous molecule is a small molecule therapeutic.

79. (withdrawn): The method of claim 72, wherein the exogenous molecule is a protein.

80. (withdrawn): The method of claim 79, wherein the protein is a transcription factor.

81. (withdrawn): The method of claim 80, wherein the transcription factor is a zinc

finger protein (ZFP).

82. (withdrawn): The method of claim 72, wherein the accessible region is a nuclease hypersensitive region.

83. (withdrawn): The method of claim 79, wherein the protein is encoded by a nucleic acid introduced into the cell.

84. (withdrawn): The method of claim 72, wherein the cell is a plant cell.

85. (withdrawn): The method of claim 72, wherein the cell is an animal cell.

86. (withdrawn): The method of claim 72, wherein the cell is a human cell.